



'New epidemic'

New York governor announces emergency measures to tackle escalating gun violence

WORLD, PAGE 11

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LIFE, PAGE 17

Whale of a time

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Last Tianlian I satellite placed in orbit

Network used to relay signals between spacecraft and ground control stations

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China launched the last satellite in its Tianlian I relay spacecraft series late on Tuesday night, which also marked the finale of the country's DFH-3 satellite platform.

A Long March 3C carrier rocket blasted off from the Xichang Satellite Launch Center in Sichuan province at 11:52 pm and then placed the Tianlian I-05 satellite into a geostationary orbit, said China Aerospace Science and Technology Corp, the country's leading space contractor.

The State-owned conglomerate

said in a statement that the satellite was the fifth and last member of the Tianlian I fleet, the nation's first-generation data relay spacecraft.

It is expected to work for at least seven years. Its service will improve the country's capability to relay signals between satellites and ground control, it said.

Tianlian I-05 is the last spacecraft developed on the DFH-3 satellite platform, which was designed in the mid-1980s. The first DFH-3-based satellite was launched in September 1994 and 40 others have followed, including many in China's Beidou Navigation

Satellite System.

China began to establish its space-based data relay system in April 2008 when the first satellite in the Tianlian I series was launched from Xichang. Tianlian I-01 is still operating, having significantly outlived its designed life span.

In July 2012, China became the second country, after the United States, to possess non-stop relay capability for its space-based infrastructure after Tianlian I-03 was deployed into space to join its two predecessors to form a basic system with global coverage.

In March 2019, China launched Tianlian II-01, its first second-generation data relay satellite.

The Tianlian network currently consists of six spacecraft — five of

the Tianlian I series and Tianlian II-01. Sources close to the system's development said Tianlian II-02 and Tianlian II-03 will be deployed soon.

Compared with the first-generation model, Tianlian II satellites feature stronger capabilities, heavier carrying capacity and longer life spans, according to Zhao Hong, chief designer of Tianlian II-01.

"Because of its newly developed antennas, the data transmission speed of the new-generation type is twice that of the first generation," Zhao said, adding that Tianlian II satellites can serve more spacecraft and have a larger operation range.

Wang Jiasheng, chief engineer of the Tianlian II series, said the Tianlian system has served a varie-

ty of space functions such as rendezvous and docking between spaceships and space stations, video links between astronauts and people on the ground, and data transmission for Earth observation, weather and other low-orbit satellites.

On June 23, a video call between President Xi Jinping, who is also general secretary of the Communist Party of China Central Committee, and the three Chinese astronauts on board the country's first space station was connected through Tianlian II-01, Wang said.

In addition, the system has provided long-distance tracking and data relay service to long-range air traffic, experimental hypersonic aircraft tests and scientific ocean expeditions, he said.